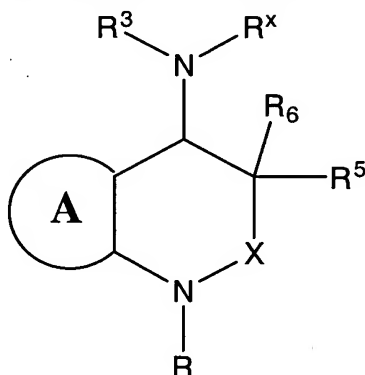


CLAIMS

What is claimed is:

1. A method of inhibiting CRTH2 in a subject in need of CRTH2 inhibition,
 5 comprising administering to the subject an effective amount of a compound represented by the following structural formula:



or a pharmaceutically acceptable salt thereof, wherein:

- 10 Ring A is an optionally substituted monocyclic aromatic ring;
 R is $-X_1-R^1$;
 Rˣ is $-X_2-R^4$, and R³ is an optionally substituted, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group; or $-NR^xR^3$, taken together, is an optionally substituted non-aromatic nitrogen containing heterocyclic group;
 X is $-C(O)-$ or $-C(R^2)_2-$;
 15 X₁ and X₂ are each independently a bond, S(O), S(O)₂, C(O) or C(O)NH;
 R¹ is H or an optionally substituted, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;
 provided that when X₁ is a bond, SO or SO₂, then R¹ is not H;
 each R² is independently H, $-X_4-R^8$ or an optionally substituted, aliphatic
 20 group, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;
 R⁴ is H, $-X_6-R^{10}$ or an optionally substituted, aliphatic group, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;
 provided that when X₂ is a bond, SO or SO₂, then R⁴ is not H;

X_4 and X_6 are each independently a straight or branched hydrocarbyl group optionally substituted with one or more groups selected from the group consisting of halo, -OH, =O, C_1 - C_3 alkoxy, nitro and cyano;

R^5 and R^6 are each independently H or C_1 - C_3 alkyl; and

5 R^8 and R^{10} are each independently H, -C(O)OR' or an optionally substituted, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;

where,

10 the optional substituents on the aliphatic group, the cycloaliphatic group or the non-aromatic heterocyclic group are one to three groups each independently selected from the group consisting of halo, R^{11} , =O, =S, =NNHR*, =NN(R*)₂, =NNHC(O)R*, =NNHCO₂(alkyl), =NNHSO₂ (alkyl) and =NR*;

the optional substituents on unsaturated carbon atoms of the aromatic group is R^{11} ;

15 the optional substituents on a nitrogen atom of the aromatic group or the nitrogen atom of the non-aromatic nitrogen containing heterocyclic group are one to three groups each independently selected from the group consisting of R^+ , $N(R^+)_2$, -C(O) R^+ , -CO₂ R^+ , -C(O)C(O) R^+ , -C(O)CH₂C(O) R^+ , -SO₂ R^+ , -SO₂ $N(R^+)_2$, -C(=S) $N(R^+)_2$, -C(=NH)- $N(R^+)_2$ and -NR⁺ SO₂ R^+ ;

20 R^{11} is one to four substituents each independently selected from the group consisting of halo, R^0 , -OH, -OR⁰, -SH, -SR⁰, 1,2-methylenedioxy, 1,2-ethylenedioxy, protected -OH, phenyl, [R¹²]-phenyl, -O(phenyl), -O([R¹²]-phenyl), -CH₂(phenyl), -CH₂([R¹²]-phenyl), -CH₂CH₂(phenyl), -CH₂CH₂([R¹²]-phenyl), -NO₂, -CN, -N(R')₂, -NR'CO₂ R^0 , -NR'C(O) R^0 , -NR'NR'C(O) R^0 , -N(R')C(O)N(R')₂, -NR'NR'C(O)N(R')₂, -NR'NR'CO₂ R^0 , -C(O)C(O) R^0 , -C(O)CH₂C(O) R' , -CO₂ R' , -C(O) R^0 , -C(O)N(R')₂, -OC(O)N(R')₂, -S(O)₂ R^0 , -SO₂N(R')₂, -S(O) R' , -NR'SO₂N(R')₂, -NR'SO₂ R^0 , -C(=S)N(R')₂, -(CH₂)_yN(R')₂, -C(=NH)-N(R')₂, -(CH₂)_yC(O)N(R')₂, -(CH₂)_yNHC(O) R' or -(CH₂)_yNHC(O)CH(V-R')(R');
25

30 R' is H, R^0 , -CO₂ R^0 , -SO₂ R^0 or -C(O) R^0 ;

y is 0-6;

V is C₁-C₆ alkylene;

each R* is independently H, an aliphatic group or an aliphatic group substituted with R¹²;

5 R⁺ is H, phenyl, [R¹²]-phenyl, -O(phenyl), -O([R¹²]-phenyl), -CH₂(phenyl), -CH₂([R¹²]-phenyl), a heteroaryl group, a non-aromatic heterocyclic group, an aliphatic group or an aliphatic group substituted with R¹²;

R^o is an aliphatic group, a cycloaliphatic group, an aromatic group, an aralkyl group or a non-aromatic heterocyclic group, each group being optionally substituted with R¹²;

10 R¹² is one to four substituents each independently selected from the group consisting of halo, C₁-C₆ alkyl, (halo)_rC₁-C₆ alkyl, C₃-C₈ cycloalkyl, (halo)_rC₃-C₈ cycloalkyl, -CN, -CF₃, -CHF₂, -CH₂F, -OCF₃, -OCHF₂, -OCH₂F, -OR', -OR¹³C(O)R', -C(O)OR', -C(O)N(R¹⁶)₂, -N(R¹⁶)₂, -NO₂, -NR¹⁶C(O)R', -NR¹⁶C(O)OR', -NR¹⁶C(O)N(R¹⁶)₂, -NR¹⁶SO₂R¹⁷, -S(O)_qR¹⁷, -R¹³NR¹⁶C(O)R', -R¹³C(O)R', -R¹³NR¹⁶C(O)OR', tetrazolyl, imidazolyl or oxadiazolyl;

R¹³ is C₁-C₆ alkyl or C₃-C₈ cycloalkyl;

each R¹⁶ is independently R' or benzyl;

R¹⁷ is R¹³ or -CF₃;

q is 0-2; and

20 r is 1-3.

2. The method of Claim 1 wherein:

Ring A is phenyl or [R¹¹]-phenyl;

X is -CHR²-;

25 R^x is -X₂-R⁴;

R¹ and R³ are each independently an optionally substituted, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;

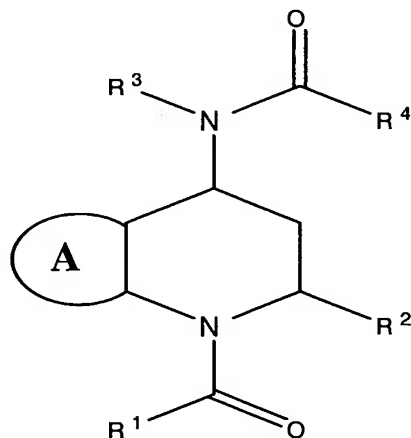
R² is H or an optionally substituted, C₁-C₄ alkyl group, C₁-C₄ alkyl alkoxymethylene group or C₃-C₆ cycloalkyl group;

30 R⁴ is an optionally substituted, aliphatic group, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group; and

R^5 and R^6 are each H.

3. The method of Claim 2 wherein R^3 is an optionally substituted aromatic group.

5 4. The method of Claim 3 wherein the compound is represented by the following structural formula:



where Ring A, R^1 , R^2 and R^4 are each independently defined in Claim 2.

10 5. The method of Claim 4 wherein:

R^1 is H or an optionally substituted, cycloalkyl group, aromatic group or non-aromatic heterocyclic group;

R^3 is phenyl or $[R^{11}]$ -phenyl;

15 R^4 is H, $-\text{CH}_2\text{C}(\text{O})\text{R}^{14}$, $-\text{CH}_2\text{R}^{15}$, $-\text{CH}_2\text{OR}^{14}$ or an optionally substituted, C_1 - C_3 alkyl group, cycloalkyl group, aromatic group or non-aromatic heterocyclic group;

R^{14} is H or an optionally substituted, alkyl group, aromatic group, cycloalkyl group or non-aromatic heterocyclic group; and

20 R^{15} is an optionally substituted, aromatic group, cycloalkyl group or non-aromatic heterocyclic group;

where R^{11} and the optional substituents are each independently defined in Claim 1.

6. The method of Claim 1 wherein Ring A is thiophene, furan, pyridine, pyrazole, pyrrole, [2,3]pyrimidine, [3,4]pyrimidine, [4,5]pyrimidine, [5,6]pyrimidine, oxazole, isoxazole or 1,2,3-triazole, each group being optionally substituted with R^{11} .

5

7. The method of Claim 6 wherein:

X is $-\text{CHR}^2-$;

R^x is $-\text{X}_2-\text{R}^4$;

10 R^1 and R^3 are each independently an optionally substituted, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;

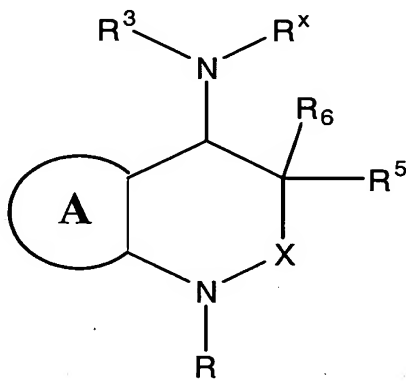
R^2 is H or an optionally substituted, C_1 - C_4 alkyl group, C_1 - C_4 alkyl alkoxymethylene group or C_3 - C_6 cycloalkyl group;

R^4 is an optionally substituted, aliphatic group, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group; and

15

R^5 and R^6 are each H.

8. A compound represented by the following structural formula:



or a pharmaceutically acceptable salt thereof, wherein:

20

Ring A is an optionally substituted monocyclic aromatic ring;

R is $-\text{X}_1-\text{R}^1$;

R^x is $-\text{X}_2-\text{R}^4$, and R^3 is an optionally substituted aromatic group; or $-\text{NR}^x\text{R}^3$, taken together, is an optionally substituted non-aromatic nitrogen containing heterocyclic group;

X is -C(O)- or -C(R²)₂-;

X₁ and X₂ are each independently a bond, S(O), S(O)₂, C(O) or C(O)NH;

R¹ is H or an optionally substituted, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;

5 provided that when X₁ is a bond, SO or SO₂, then R¹ is not H;

each R² is independently H, -X₄-R⁸ or an optionally substituted, aliphatic group, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;

R⁴ is H, -X₆-R¹⁰ or an optionally substituted, aliphatic group, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;

10 provided that when X₂ is a bond, SO or SO₂, then R⁴ is not H;

X₄ and X₆ are each independently a straight or branched hydrocarbyl group optionally substituted with one or more groups selected from the group consisting of halo, -OH, =O, C₁-C₃ alkoxy, nitro and cyano;

R⁵ and R⁶ are each independently H or C₁-C₃ alkyl; and

15 R⁸ and R¹⁰ are each independently H, -C(O)OR' or an optionally substituted, cycloaliphatic group, aromatic group or non-aromatic heterocyclic group;

where,

20 the optional substituents on the aliphatic group, the cycloaliphatic group or the non-aromatic heterocyclic group are one to three groups each independently selected from the group consisting of halo, R¹¹, =O, =S, =NNHR*, =NN(R*)₂, =NNHC(O)R*, =NNHCO₂(alkyl), =NNHSO₂ (alkyl) and =NR*;

the optional substituents on unsaturated carbon atoms of the aromatic group is R¹¹;

25 the optional substituents on a nitrogen atom of the aromatic group or the nitrogen atom of the non-aromatic nitrogen containing heterocyclic group are one to three groups each independently selected from the group consisting of R⁺, N(R⁺)₂, -C(O)R⁺, -CO₂R⁺, -C(O)C(O)R⁺, -C(O)CH₂C(O)R⁺, -SO₂R⁺, -SO₂N(R⁺)₂, -C(=S)N(R⁺)₂, -C(=NH)-N(R⁺)₂ and -NR⁺SO₂R⁺;

30 R¹¹ is one to four substituents each independently selected from the group consisting of halo, R^o, -OH, -OR^o, -SH, -SR^o, 1,2-methylenedioxy, 1,2-

- ethylenedioxy, protected -OH, phenyl, [R¹²]-phenyl, -O(phenyl), -O([R¹²]-phenyl),
 -CH₂(phenyl), -CH₂([R¹²]-phenyl), -CH₂CH₂(phenyl), -CH₂CH₂([R¹²]-phenyl), -
 NO₂, -CN, -N(R')₂, -NR'CO₂R^o, -NR'C(O)R^o, -NR'NR'C(O)R^o,
 -N(R')C(O)N(R')₂, -NR'NR'C(O)N(R')₂, -NR'NR'CO₂R^o, -C(O)C(O)R^o,
 5 -C(O)CH₂C(O)R', -CO₂R', -C(O)R^o, -C(O)N(R')₂, -OC(O)N(R')₂, -S(O)₂R^o,
 -SO₂N(R')₂, -S(O)R', -NR'SO₂N(R')₂, -NR'SO₂R^o, -C(=S)N(R')₂, -(CH₂)_yN(R')₂,
 -C(=NH)-N(R')₂, -(CH₂)_yC(O)N(R')₂, -(CH₂)_yNHC(O)R' or
 -(CH₂)_yNHC(O)CH(V-R')(R');
 R' is H, R^o, -CO₂R^o, -SO₂R^o or -C(O)R^o;
 10 y is 0-6;
 V is C₁-C₆ alkylene;
 each R* is independently H, an aliphatic group or an aliphatic group
 substituted with R¹²;
 R⁺ is H, phenyl, [R¹²]-phenyl, -O(phenyl), -O([R¹²]-phenyl), -
 15 CH₂(phenyl), -CH₂([R¹²]-phenyl), a heteroaryl group, a non-aromatic
 heterocyclic group, an aliphatic group or an aliphatic group substituted with R¹²;
 R^o is an aliphatic group, a cycloaliphatic group, an aromatic group, an
 aralkyl group or a non-aromatic heterocyclic group, each group being optionally
 substituted with R¹²;
 20 R¹² is one to four substituents each independently selected from the group
 consisting of halo, C₁-C₆ alkyl, (halo)_rC₁-C₆ alkyl, C₃-C₈ cycloalkyl, (halo)_rC₃-C₈
 cycloalkyl, -CN, -CF₃, -CHF₂, -CH₂F, -OCF₃, -OCHF₂, -OCH₂F, -OR', -
 OR¹³C(O)R', -C(O)OR', -C(O)N(R¹⁶)₂, -N(R¹⁶)₂, -NO₂, -NR¹⁶C(O)R', -
 NR¹⁶C(O)OR', -NR¹⁶C(O)N(R¹⁶)₂, -NR¹⁶SO₂R¹⁷, -S(O)_qR¹⁷, -R¹³NR¹⁶C(O)R', -
 25 R¹³C(O)R', -R¹³NR¹⁶C(O)OR', tetrazolyl, imidazolyl or oxadiazolyl;
 R¹³ is C₁-C₆ alkyl or C₃-C₈ cycloalkyl;
 each R¹⁶ is independently R' or benzyl;
 R¹⁷ is R¹³ or -CF₃;
 q is 0-2; and
 30 r is 1-3;

provided that the compound is not 2-methyl-N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(2-methyl-1-oxobutyl)-4-quinolinyl]-butanamide; N-(1-Acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl)-N-phenyl-heptanamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(1-oxo-3-phenylpropyl)-4-quinolinyl]-benzenepropanamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(3-nitrobenzoyl)-4-quinolinyl]-hexanamide; N-[1,1'-biphenyl]-3-yl-N-[1,2,3,4-tetrahydro-1-(4-methoxybenzoyl)-2-methyl-4-quinolinyl]-acetamide; N-(1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl)-N-(4-nitrophenyl)-heptanamide; N-(1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl)-N-(4-methoxyphenyl)-2-methyl-propanamide; N-[1-(4-fluorobenzoyl)-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-butanamide; N-phenyl-N-[1,2,3,4-tetrahydro-1-(3-methoxybenzoyl)-2-methyl-4-quinolinyl]-pentanamide; 2-ethyl-N-[1-(2-ethyl-1-oxobutyl)-1,2,3,4-tetrahydro-2,8-dimethyl-4-quinolinyl]-N-(2-methylphenyl)-butanamide; N-[1-[(4-fluorophenyl)acetyl]-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-propanamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(4-nitrobenzoyl)-4-quinolinyl]-octanamide; N-cyclohexyl-4-[(cyclohexylamino)carbonyl]phenylamino]-3,4-dihydro-2-methyl-1(2H)-quinolinecarboxamide; N-[1-(4-ethylbenzoyl)-1,2,3,4-tetrahydro-2,8-dimethyl-4-quinolinyl]-N-(2-methylphenyl)-3-(4-nitrophenyl)-2-propenamide; 3-(4-methoxyphenyl)-N-phenyl-N-[1,2,3,4-tetrahydro-1-[3-(4-methoxyphenyl)-1-oxo-2-propenyl]-2-methyl-4-quinolinyl]-2-propenamide; 4-[(ethoxyoxoacetyl)phenylamino]-3,4-dihydro-2-methyl- γ -oxo-ethyl ester-1(2H)-quinolineacetic acid; N-[1-(3-cyclohexyl-1-oxopropyl)-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-cyclohexanepropanamide; 4-(acetylphenylamino)-3,4-dihydro-2-methyl- γ -oxo-1(2H)-quinolinepentanoic acid; N-(1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl)-2,2-dimethyl-N-phenyl-propanamide; N-(1-benzoyl-6-bromo-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl)-N-phenyl-pentanamide; N-[1-(2-furanylcarbonyl)-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-acetamide; 2-methyl-N-phenyl-N-[1,2,3,4-tetrahydro-1-(3-methoxybenzoyl)-2-methyl-4-quinolinyl]-propanamide; N-[1-[(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)acetyl]-1,2,3,4-tetrahydro-2-methyl-4-

quinolinyl]-N-phenyl-acetamide; 2,2,2-trifluoro-N-phenyl-N-[1,2,3,4-tetrahydro-
 1-(3-methoxybenzoyl)-2-methyl-4-quinolinyl]- acetamide; 2-ethyl-N-[1-(2-ethyl-
 1-oxobutyl)-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl- butanamide; N-
 (1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl)-N-(3-methoxyphenyl)-
 5 acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(1-oxohexyl)-4-
 quinolinyl]- acetamide; N-(1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl)-N-
 phenyl-2-thiophenecarboxamide; N-[1-(2-fluorobenzoyl)-1,2,3,4-tetrahydro-2-
 methyl-4-quinolinyl]-N-phenyl- hexanamide; N-phenyl-N-[1,2,3,4-tetrahydro-1-
 (4-methoxybenzoyl)-2-methyl-4-quinolinyl]- hexanamide; N-phenyl-N-[1,2,3,4-
 10 tetrahydro-1-(4-methoxybenzoyl)-2-methyl-4-quinolinyl]- hexanamide; N-[1-
 (cyclopropylcarbonyl)-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-
 cyclopropanecarboxamide; N-(1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-
 quinolinyl)-N-(4-methylphenyl)- acetamide; 2-methyl-N-phenyl-N-[1,2,3,4-
 tetrahydro-2-methyl-1-(2-methyl-1-oxopropyl)-4-quinolinyl]- propanamide; N-
 15 phenyl-N-[1,2,3,4-tetrahydro-1-(4-methoxybenzoyl)-2-methyl-4-quinolinyl]- 2-
 thiophenecarboxamide; 1-(3,5-dinitrobenzoyl)-N-formyl-1,2,3,4-tetrahydro-2-
 methyl-N-phenyl-4-quinolinamine; N-[1-(4-chloro-3-nitrobenzoyl)-1,2,3,4-
 tetrahydro-2-methyl-4-quinolinyl]-N-phenyl- acetamide; N-phenyl-N-[1,2,3,4-
 tetrahydro-2-methyl-1-(3-nitrobenzoyl)-4-quinolinyl]-acetamide; N-phenyl-N-
 20 [1,2,3,4-tetrahydro-1-(3-methoxybenzoyl)-2-methyl-4-quinolinyl]- hexanamide;
 N-[1-(2-furanylcarbonyl)-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-2-
 furancarboxamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(1-oxopropyl)-4-
 quinolinyl]-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-1-[3-(4-methoxyphenyl)-
 1-oxo-2-propenyl]-2-methyl-4-quinolinyl]-acetamide; 3-(2-furanyl)-N-[1-[3-(2-
 25 furanyl)-1-oxo-2-propenyl]-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-
 2-propenamide; N-[1-[2-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-1-oxo-3-
 phenylpropyl]-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-octanamide;
 N-[1-(3-chlorobenzoyl)-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-N-phenyl-
 acetamide; Relative stereochemistry N-phenyl-N-[(2R,4S)-1,2,3,4-tetrahydro-2-
 30 methyl-1-(1-oxopropyl)-4-quinolinyl]- acetamide; Relative stereochemistry N-
 [(2R,4S)-1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinolinyl]-2-methyl-N-

- phenyl-propanamide; Relative stereochemistry N-[(2R,4S)-1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-hexanamide; Relative stereochemistry N-[(2R,4S)-1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-propanamide; Relative stereochemistry N-[(2R,4S)-1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-heptanamide; Relative stereochemistry N-[(2R,4S)-1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-2,2-dimethyl-N-phenyl-propanamide; N-[1-(3-fluorobenzoyl)-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-acetamide; N-[1-[4-(1,1-dimethylethyl)benzoyl]-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-acetamide; N-(1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-2-methyl-N-phenyl-propanamide; 2,2,2-trifluoro-N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(trifluoroacetyl)-4-quinoliny]-acetamide; Relative stereochemistry N-[(2R,4S)-1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-2,2-dimethyl-N-phenyl-propanamide; Relative stereochemistry N-[(2R,4S)-1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-butanamide; Relative stereochemistry N-[(2R,4S)-1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-acetamide; Relative stereochemistry N-phenyl-N-[(2R,4S)-1,2,3,4-tetrahydro-2-methyl-1-(1-oxoheptyl)-4-quinoliny]-acetamide; Relative stereochemistry N-phenyl-N-[(2R,4S)-1,2,3,4-tetrahydro-2-methyl-1-(1-oxohexyl)-4-quinoliny]-acetamide; Relative stereochemistry N-[(2R,4S)-1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-pentanamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(1-oxo-3-phenyl-2-propenyl)-4-quinoliny]-acetamide; Relative stereochemistry N-[(2R,4S)-1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-heptanamide; Relative stereochemistry N-[(2R,4S)-1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-acetamide; Relative stereochemistry N-[(2R,4S)-1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-pentanamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(tricyclo[3.3.1.1^{3,7}]dec-1-ylcarbonyl)-4-quinoliny]-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(1-oxopropyl)-4-quinoliny]-propanamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(2-thienylcarbonyl)-4-quinoliny]-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-1-(4-methoxybenzoyl)-2-methyl-4-quinoliny]-2-furancarboxamide; N-phenyl-N-

[1,2,3,4-tetrahydro-1-(4-methoxybenzoyl)-2-methyl-4-quinoliny]-acetamide; N-[1-(3,5-dinitrobenzoyl)-1,2,3,4-tetrahydro-2-methyl-4-quinoliny]-N-phenyl-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(4-nitrobenzoyl)-4-quinoliny]-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-1-(2-iodobenzoyl)-2-methyl-4-quinoliny]-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(2-methyl-1-oxopropyl)-4-quinoliny]-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-[(4-methylphenyl)sulfonyl]-4-quinoliny]-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-[(4-nitrophenyl)methyl]-4-quinoliny]-acetamide; N-phenyl-N-[1,2,3,4-tetrahydro-1-(3-methoxybenzoyl)-2-methyl-4-quinoliny]-acetamide; N-(1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-butanamide; N-phenyl-N-[1,2,3,4-tetrahydro-2-methyl-1-(1-oxobutyl)-4-quinoliny]-acetamide; N-(1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-hexanamide; N-(1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-pentanamide; N-(1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-propanamide; 1-benzoyl-1,2,3,4-tetrahydro-4-(N-phenylacetamido)quinaldine; N-(1-acetyl-6-bromo-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-acetamide; N-(1-acetyl-1,2,3,4-tetrahydro-2-methyl-6-nitro-4-quinolyl)-acetanilide; N-(1-acetyl-6-chloro-1,2,3,4-tetrahydro-2-methyl-4-quinolyl)-acetanilide; N-(1-acetyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-acetamide; N-(1-benzoyl-6-bromo-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-acetamide; N-(1-benzoyl-6-chloro-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-acetamide; N-(1-benzoyl-1,2,3,4-tetrahydro-2-methyl-4-quinoliny)-N-phenyl-butanamide; N-phenyl-N-[1,2,3,4-tetrahydro-1-(3-fluorobenzoyl)-2-methyl-4-quinoliny]-hexanamide; N-[1-(3-chloro-benzoyl)-2-methyl-1,2,3,4-tetrahydro-quinolin-4-yl]-N-phenyl-acetamide; N-[1-(4-fluoro-benzoyl)-2-methyl-6-nitro-1,2,3,4-tetrahydro-quinolin-4-yl]-N-phenyl-acetamide; pentanoic acid (1-benzoyl-6-bromo-2-methyl-1,2,3,4-tetrahydro-quinolin-4-yl)-phenyl-amide; N-(1-benzoyl-6-chloro-2-methyl-1,2,3,4-tetrahydro-quinolin-4-yl)-N-phenyl-acetamide; N-[6-chloro-1-(4-fluoro-benzoyl)-2-methyl-1,2,3,4-tetrahydro-quinolin-4-yl]-N-phenyl-acetamide; N-[6-bromo-1-(4-fluoro-benzoyl)-2-methyl-1,2,3,4-tetrahydro-quinolin-4-yl]-N-phenyl-acetamide; N-(1-benzoyl-6-

nitro-2-methyl-1,2,3,4-tetrahydro-quinolin-4-yl)-N-phenyl-acetamide; N-(1-benzoyl-2-methyl-1,2,3,4-tetrahydro-quinolin-4-yl)-N-phenyl-butyramide; N-[1-(3-methoxy-benzoyl)-2-methyl-1,2,3,4-tetrahydro-quinolin-4-yl]-2,2-dimethyl-N-phenyl-propionamide.

5

9. The compound of Claim 8 wherein:

X is $-\text{CHR}^2-$;

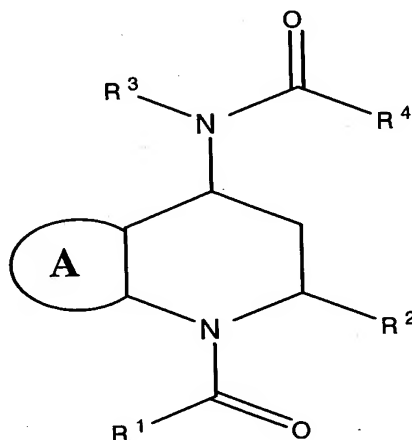
R^2 is H, methyl or ethyl;

R^3 is an optionally substituted aromatic group; and

R^5 and R^6 are each H.

10

10. The compound of Claim 9 wherein the compound is represented by the following structural formula:



15

where Ring A, R^1 and R^4 are each independently defined in Claim 8.

11. The compound of Claim 10 wherein:

R^1 is H or an optionally substituted, cycloalkyl group, aromatic group or non-aromatic heterocyclic group;

20

R^3 is phenyl or $[\text{R}^{11}]$ -phenyl;

R^4 is H, $-\text{CH}_2\text{C}(\text{O})\text{R}^{14}$, $-\text{CH}_2\text{R}^{15}$, $-\text{CH}_2\text{OR}^{14}$ or an optionally substituted, C_1 - C_3 alkyl group, cycloalkyl group, aromatic group or non-aromatic heterocyclic group;

R^{14} is H or an optionally substituted, alkyl group, aromatic group, cycloalkyl group or non-aromatic heterocyclic group; and

R^{15} is an optionally substituted, aromatic group, cycloalkyl group or non-aromatic heterocyclic group;

5 where R^{11} and the optional substituents are each independently defined in Claim 8.

12. The compound of Claim 10 wherein:

10 Ring A is phenyl or $[R^{11}]$ -phenyl, where R^{11} is at the five, six, seven and/or eight position;

R^1 is R^{18} ; and

R^4 is R^{18} , C_1 - C_4 alkyl, $-CH_2OH$, $-CH_2OCH_3$, $-CH_2OCH_2CH_3$, $-CH_2CH_2OCH_3$ or $-CH_2CH_2OCH_2CH_3$; and

15 R^{18} is an optionally substituted, phenyl, pyridyl, furanyl, thiophenyl, isoxazolyl, imidazolyl, pyrazolyl, pyrrolyl, benzofuranyl, tetrazolyl, thiazolyl, benzyl, benzothiazolyl, benzoimidazolyl, benzotriazolyl, benzomorpholinyl, benzopyrazolyl, indolyl, $-CH_2$ -(*N*-pyridyl), $-CH_2$ -furanyl, $-CH_2$ -thiophienyl, $-CH_2$ -isoxazolyl, $-CH_2$ -imidazolyl, $-CH_2$ -pyrazolyl, $-CH_2$ -pyrrolyl, $-CH_2$ -benzofuranyl, $-CH_2$ -tetrazolyl, $-CH_2$ -thiazolyl, $-CH_2$ -tetrazolyl, 20 $-CH_2$ -benzothiazolyl, $-CH_2$ -benzimidazolyl, $-CH_2$ -O-phenyl, $-CH_2C(O)$ -phenyl, naphthalimidyl, tetrahydrofuranyl, cyclohexyl, cyclopentyl or cyclopropyl group; where R^{11} and the optional substituents are each independently defined in Claim 8.

25 13. The compound of Claim 12 wherein:

 Ring A is phenyl or $[R^{11}]$ -phenyl, where R^{11} is at the six and/or seven position;

R^1 is phenyl, thiophenyl, furanyl, pyridyl, pyrimidinyl, oxazolyl, isoxazolyl, benzotriazolyl or benzomorpholinyl, each group being optionally substituted with 30 R^{11} ;

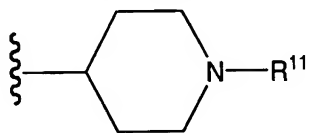
R^3 is $[R^{11}]$ -phenyl; and

R^4 is methyl, ethyl, propyl, *iso*-propyl, *n*-butyl, *sec*-butyl, *tert*-butyl, $-\text{CH}_2\text{OCH}_3$ or $-\text{CH}_2\text{OCH}_2\text{CH}_3$;

where R^{11} is defined in Claim 8.

- 5 14. The compound of Claim 12 wherein:

R^1 is thiophenyl, $[R^{11}]$ -thiophenyl, isoxazolyl, $[R^{11}]$ -isoxazolyl, pyridinyl, $[R^{11}]$ -pyridinyl, benzotriazolyl, $[R^{11}]$ -benzotriazolyl, benzomorpholinyl or $[R^{11}]$ -benzomorpholinyl, where R^{11} is defined in Claim 8; or R^1 is phenyl or $[R^{11}]$ -phenyl, where R^{11} is halo, $-\text{OR}^0$, $-\text{N}(\text{R}')_2$, oxazolyl or



10

R^3 is $[R^{11}]$ -phenyl, where R^{11} is Br, Cl, $-\text{CH}_3$, $-\text{N}(\text{R}')_2$, $-\text{NHC}(\text{O})\text{OR}'$, $-\text{S}(\text{O})_2\text{CH}_3$, $-\text{S}(\text{O})_2\text{N}(\text{R}')_2$ or $-(\text{CH}_2)_y\text{C}(\text{O})\text{N}(\text{R}')_2$; and

R^4 is methyl, ethyl or $-\text{CH}_2\text{OCH}_3$;

where R^0 and R' are each independently defined in Claim 8.

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15. The compound of Claim 14 wherein R^3 is $[R^{11}]$ -phenyl, where R^{11} is one substituent at the para position.

16. The compound of Claim 8 wherein:

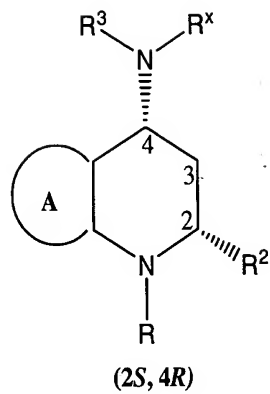
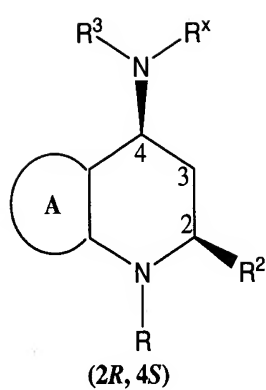
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X is $-\text{CHR}^2$; and

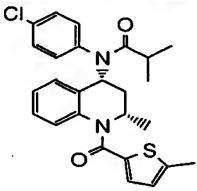
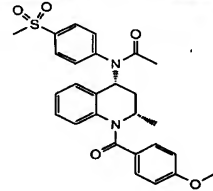
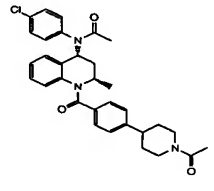
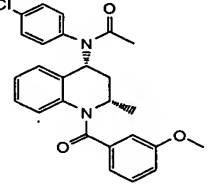
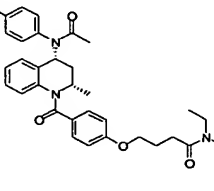
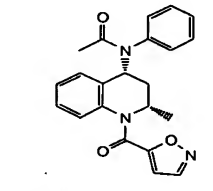
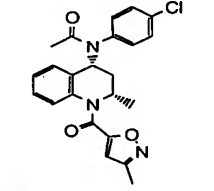
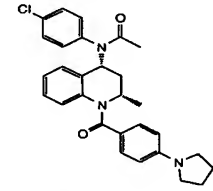
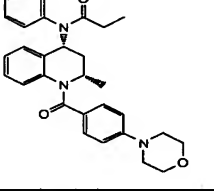
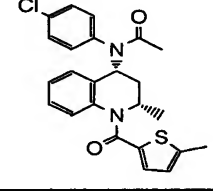
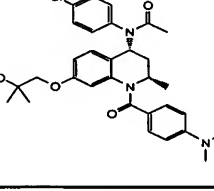
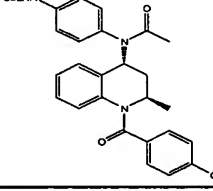
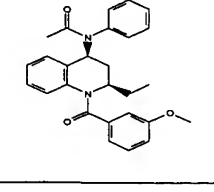
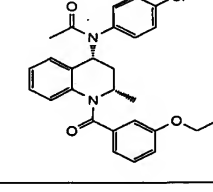
R^2 and NR^xR^3 are in a *cis* configuration relative to one another;

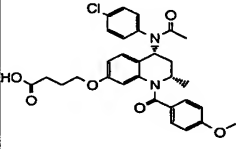
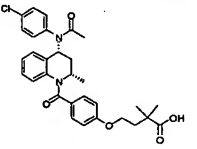
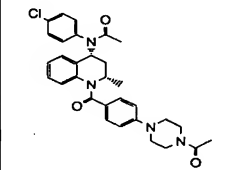
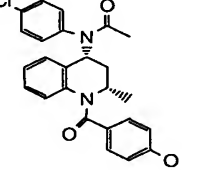
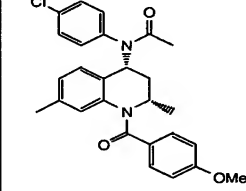
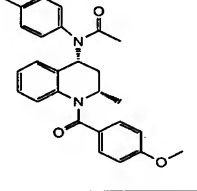
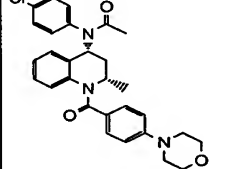
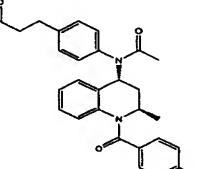
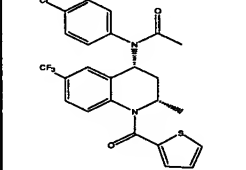
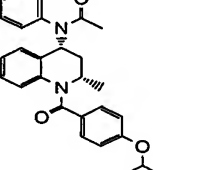
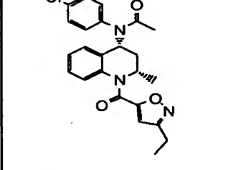
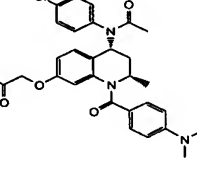
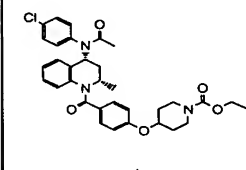
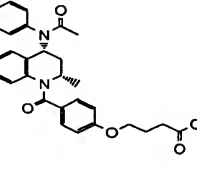
where R^2 , R^x and R^3 are each independently defined in Claim 8.

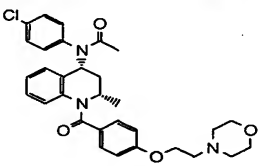
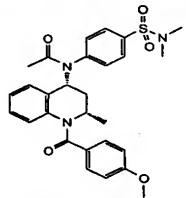
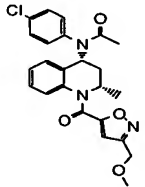
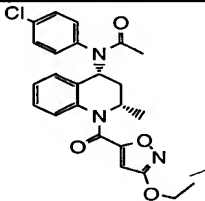
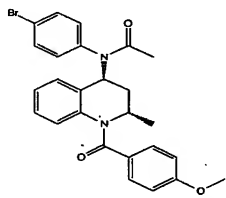
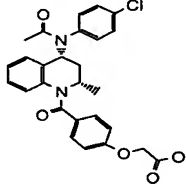
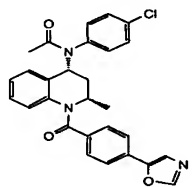
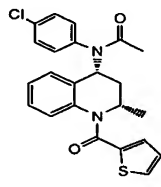
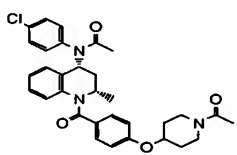
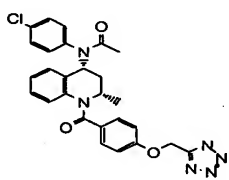
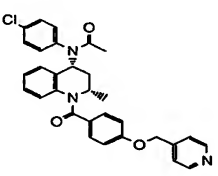
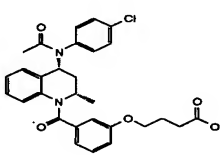
17. The compound of Claim 16 where the *cis* configuration is 2S,4R or 2R,4S:

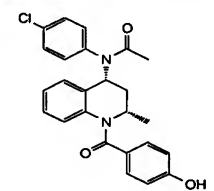
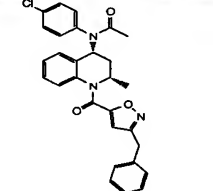
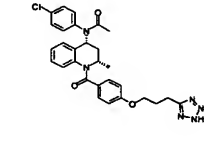
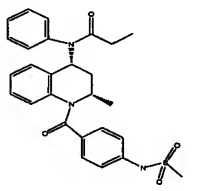
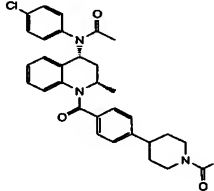
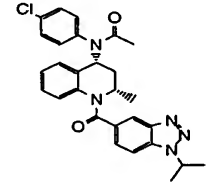
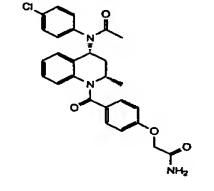
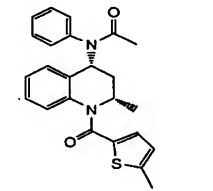
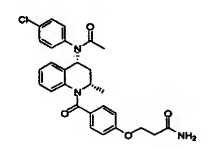
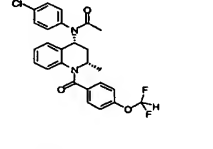
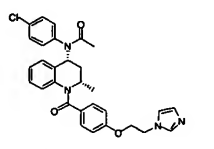
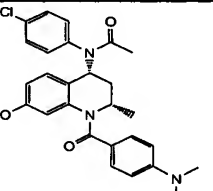
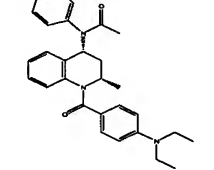
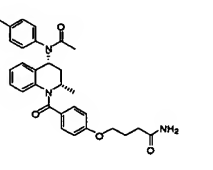


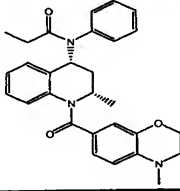
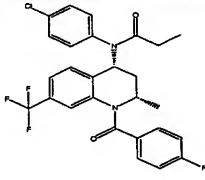
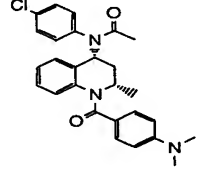
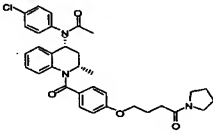
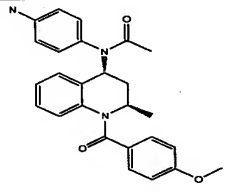
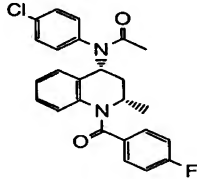
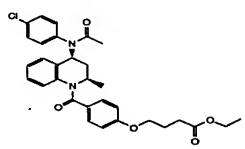
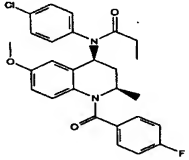
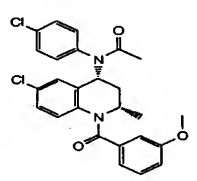
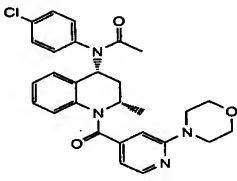
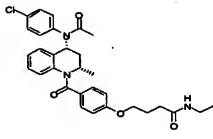
18. The compound of claim 8 which is represented by a structural formula selected from the group consisting of:

Structure	Structure
	
	
	
	
	
	
	

Structure	Structure
	
	
	
	
	
	
	

Structure	Structure
	
	
	
	
	
	

Structure	Structure
	
	
	
	
	
	
	

Structure	Structure
	
	
	
	
	
	

or a pharmaceutically acceptable salt thereof.

- 5 19. A pharmaceutical composition comprising the compound of Claim 8 and a pharmaceutically acceptable diluent, excipient or carrier.

20. A method of inhibiting CRTH2 in a subject in need of CRTH2 inhibition, comprising administering to the subject an effective amount of the compound or pharmaceutical salt of Claim 8.
- 5 21. A method of inhibiting DP in a subject in need of DP inhibition, comprising administering to the subject an effective amount of the compound or pharmaceutical salt of Claim 8.
- 10 22. A method of treating an inflammatory disease, disorder or symptom in a subject in need of the treatment, comprising administering to the subject an effective amount of the compound or pharmaceutical salt of Claim 8.
- 15 23. The method of Claim 22, where the inflammatory disease, disorder or symptom is allergic rhinitis, allergic asthma, atopic dermatitis, chronic obstructive pulmonary disorder, rheumatoid arthritis, osteoarthritis, inflammatory bowel disease or a skin disorder.
- 20 24. The method of Claim 23, where the inflammatory disease, disorder or symptom is allergic rhinitis or allergic asthma.